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ABSTRACT

This publication reports conference discussions concerning the rationale and strategies for curriculum development and its relation to learning research, school operations, educational and social reform, and curriculum implementation. The discussions examine the current role of the Federal Government in curriculum development and offer suggestions for the future role of the government. Suggested are some particular experiments for curriculum development and some initiatives to investigate the context in which curriculum development takes place. A related document is EA 004 936. (DN)

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CURRICULUM DEVELOPMENT

Report of a Planning Conference
for the NIE Planning Unit

December 17-18, 1971

Washington, D.C.

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CURRICULUM DEVELOPMENT

PREFATORY NOTE

This report does not represent a consensus view of the conference on the issues discussed. many of the participants. in fact. may strenuously disagree with particular points made here. though much of the paper draws heavily on the views of individuals and parts are quoted at length from statements made at the conference. It seemed to us. however. that a personal view. informed by the conference, might. perhaps because of its biases. be more useful than a consensual report in stimulating a continuing discussion of the central problems of curriculum development.

Marc S. Tucker and Wade M. Robinson

Curriculum development is concerned with what is taught and the strategies for teaching it. These are central and perennial issues in education but they are not all-encompassing. When considering them, we should remember that

> it is not uncommon for Americans to substitute educational reform for basic social reform and then to castigate the schools for having been unable to reform the nation's social class structure (Bourne, 1972, p. 21).

Even so. our discussion of curriculum development will go beyond the activity strictly defined, to include aspects of research on learning and school operations, curriculum implementation and institutional and general social reform, because they interact with curriculum development at many points, defining its context, providing its limits. and suggesting its possibilities.

The problems of curriculum development are particularly vexing when considering the formulation of an appropriate federal role. The NIE is being planned against a background of rapidly expanding role for the national government in the definition and solution of social problems, and further centralization of economic, political and social power. In part. this is the result of technological revolutions in communication and transportation, in part the failure or inability of local institutions to respond to the expressed needs of the body politic. The current attacks against the fundamental legal basis of local power, the property tax and local zoning, if successful, are likely to accelerate the trend to centralization and increase the pressure for centrally formulated solutions, particularly in the field of education.

One fairly recent and predominant response to these pressures within some of the branches of the federal government responsible for education and curriculum development has been the attempt to apply to curriculum development those features of technological and social engineering that appear to have produced success in other national endeavors. Borrowing much of their vocabulary and methodology from an as yet unassimilated mix of engineering, systems analysis, and the emerging proto-technologies of some of the behaviorists, advocates of this approach speak of using systems design and operations research in curriculum development, of the *a priori* establishment of behavioral objectives, of budgeting programs according to hierarchies of highly specified objectives attached to equally specific costs, of programming children and their learning using behavior modification techniques founded on behaviorist psychology, of replicating prototypes and installing new practices.

At its best, in time and with enough funding, some aspects of this approach may yield fruit for the eventual development of a "technology of curriculum development," as serious scholars now at work begin to understand and make sense of this as yet unrationalized "pastiche." At its worst, this approach is scientistic rather than scientific and more often anti-intellectual than not.

The revulsion against the accelerating trend toward big government, national solutions, seemingly value-free technological fixes and cultural homogenization has evoked among many people, most conspicuously the young, a literature and school of protest in the field of education as elsewhere. Faithful to the tradition of protest literature, these critics focus on the rejection, on

humanistic grounds, of the dominant institutions of education as institutions. Thus, much is said of de-schooling society, of non-school schools, of emphasizing learning rather than teaching, of dismembering the bureaucracy by turning control of schools over to the students and community, of respect for local traditions, culture, and language.

This camp most often construes the curriculum development problem in terms of providing as few constraints as possible on the natural growth and development of the child. They reject the engineering view in favor of an approach that emphasizes the quality of relationships among the participants in the educational process. In this view, children will educate themselves if freed from the custodial and generally oppressive environment of present schools and allowed to progress freely through their natural stages of growth in a friendly, supportive environment that encourages them to explore the worlds of intellect and emotion. Frequently, however, this view is accompanied by overtones as anti-intellectual as those characterizing the worst of the other group. Rationality and intellectual achievement are often perceived as subtle tools of the elite to maintain their dominant position. Each individual, according to this view, has an essential quality and worth valuable in his own right and not in relation to the attainment of others. These virtues need not be inculcated; they will naturally emerge if the individual is placed in a free and open environment that supports his capacity to be sensitive to the unique and valuable characteristics of himself and others.

Large scale, centralized curriculum development—of the sort produced by the engineering model sketched out above—obviously has no place in this schema. Inasmuch as its products appear to constrict individual choice and freedom, impose limitations on self-actualization, imply a hierarchy of educational wisdom and the dominance of an intellectual elite, and deny the capacity of the teacher and student to engage in the process of constructing an educational environment—centralized curriculum development of that sort is *ipso facto* bad because it denies the validity of the fundamental values of this group.

Of course, ideological overtones in the conflict between these groups have deep roots in American culture and ramifications in the wider cultural and political debate in the country. Many issues most often discussed as technical problems in curriculum development have their origins in this ideological conflict and are, therefore, frequently resolved on the political plane, in the absence of any common language of discourse in education or any overarching conceptual framework so widely accepted as to constitute a basis for proceeding. Among such issues are the questions of whether behaviorist psychology or developmental psychology should be used as the research base in learning theory for curriculum development, whether curriculum should be developed primarily in a few specialized agencies designed for that purpose or in schools by teachers assisted by others, whether curriculum is best developed in the framework of a specific list of objectives established *a priori* or by an iterative process in which the goals emerge slowly out of the process itself, whether what is most important is the materials produced or the process of producing them, whether curriculum should be designed to help children integrate themselves into our high technological society or to give them the tools to effect a peaceful revolution to speed the arrival of the post-industrial society. The question of what should be taught and how is value-laden, of course, and it should come as no surprise that discussions of curriculum development are couched in ideological terms at a time of national conflict and analysis in every arena where values are at issue.

It is beyond the scope of this paper to present a fully-articulated rationale and strategy for curriculum development. But a beginning is possible, based in part on an article by David Hawkins, "Mind and Mechanism in Education," and a draft paper by Lauren Resnick, "Open Education: Some Tasks for Technology." In Hawkins' words, our object is "to optimize children's capacity to conduct their own learning, and to become their own teachers" (Hawkins, 1971). Drawing on Piaget, Hawkins maintains that this goal cannot be achieved by employing the operant conditioning techniques of the behaviorist school because these techniques do not take account of the changing intellectual structures used by children to assimilate certain complex stimuli and produce appropriate responses:

> the process of assimilation and accommodation which is crucial to education, and more generally to human conduct, is one which is so largely self-organizing, and so minimally a product of the summation of stimulus-response-reinforcement episodes, that any mechanistic program is doomed which

> would hope to describe human behavior by surrounding the organism by an envelop of external causal conditions. To try to explain behavior by behavioral laws patterned wishfully after the laws of physics is quite contrary to good scientific style. . . Such instruction works, as it does and in the way it does, not because the theory underlying it is correct but because in such situations, the learner accommodates to a coercive situation and brings his considerable talents to bear in constructing a defensive framework of performance. The fact that in such a situation only so-called positive reinforcements are used (at least by the orthodox Skinnerians) should not blind us for a minute to the fact that the situation itself is coercive and is recognized as such by children (Hawkins, 1971).

Hawkins links the behaviorist approach with those who seek to engineer educational change by employing the same principles of design that guide the construction of a bridge. a building, or a machine. He points out that

> the principle of design. . .requires that we have goals well enough defined to provide criteria of choice among alternative means. It also requires that we have materials available to us which are sufficiently homogeneous and sufficiently understood so that we can apply well-tested rules to the selection and organization of an efficient means of reaching our goal. Only when these two conditions are satisfied can we proceed to specify ahead of time just how our structure or mechanism will be put together (Hawkins, 1971).

But, in fact,

> the effective aims of education, which determine the design of schools and of instructional patterns and of curricula, are subject to constant re-examination and controversy. The still more general aims, which link education to an aspiration toward greater human competence and happiness, are as shrouded in uncertainties as the ends of life itself, immensely important, always open to the cultivation of insight and conviction, but not crisp simple little formulae which will guide the educational draftsman at his drawing board (Hawkins, 1971).

How, then, should we proceed? Hawkins addresses this question in terms of style by recounting the approach employed by the Elementary Science Study.

> We said that we hoped to make it easier for teachers to induct themselves and children into a frame of mind conducive to the enjoyment and close observation of natural phenomena, and then into the practical art of scientific investigation; that so far as we knew this could only be done by getting involved in that art from the beginning. This meant designing inexpensive laboratory materials and apparatus and . . . surveying the resources of wood and field and stream, of back alley and junk pile. We said we did not believe it possible to transmit the intellectual and practical tools of science through a sequence of little isolated exercises, but rather that we should first involve children in observation and inquiry with the tools they already possessed, and in this way to help them create or assimilate sharper tools and more adequate knowledge. We said that we therefore thought it best to try to evolve curricular materials and strategies out of repeated attempts to involve children in inquiry. We were thus committed to be very opportunistic. that is to say very empirical, in selecting for further trial just those materials and strategies which did in fact best beckon to and absorb children, of various ages and conditions. Nor did we believe that we could become final authorities on this subject. What we hoped, rather, was that in enlarging the store of materials and ideas available to teachers, we would help them in *their* proper task of helping children on the road to more competent choice and learning. That also meant giving teachers wider opportunities for choice and learning, not circumventing them with detailed curricular guidance which would substitute for their inventions and denigrate their professional role.

But often the demand for objectives was not satisfied with this kind of "vague loose talk." What was expected often, whether from sheer habit or from anxiety or extreme narrowness of vision, was that we should produce a completely organized and sequenced guide for everybody who "adopted" our program. And

> that was where we stuck. We said we thought we were learning some of the *means* of good science teaching, but that we were not yet nearly wise enough to present what is vulgarly known in the trade as "a complete package," with objectives spelled out, little texts, and words in teachers' mouths. We said we thought this should be left quite flexible and open to decision in the careers of particular schools, teachers, and children; open to significant choice (Hawkins, 1971).

It is clear, in any case, that there is a middle ground between educational engineering and the romantic approach of those who contend that no centrally organized approach to curriculum development is necessary. The important point is that we do not see either of the two approaches sketched above as having sufficient power as a conception of the problem or as a collection of solutions to enable the NIE to ground its curriculum development efforts firmly on one or the other. Moreover, the philosophical and ideological issues which surface readily when one takes either point of view seriously are not as yet being addressed in any long-term systematic way, as they should be, we feel.

Resnick, who construes the problem in terms of the gap between the educational technologists and the problems of open education, between current knowledge and practice in psychology and the need to develop new methodologies, new language, and new ways to conceive of learning, pleads for closer linkage between curriculum development and fundamental research—arguing, as do the authors, that the joining of these efforts is absolutely vital to increased understanding and to the rigorous development of each. Separation, on the other hand, frequently deprives both and may in the future lead to trivial results, as it too often has in the past. These statements should not be taken to mean, even by implication, that rigorous experimental and laboratory research is not necessary. Quite the contrary. We call for more rather than less effort here. But laboratory research as the only or even the main inquiry vehicle is certainly not sufficient to the needs of education today, if it ever was.

Resnick suggests that rather than depend on the design of extensive highly sequential curricula usable only as complete systems, we consider employing a modular approach to curriculum development based on the creation of units of instruction that could be relatively independent of one another. These units would differ not only with respect to subject matter, but would accommodate differences in cognitive style and competence, and would be adaptable to almost any sequencing that was appropriate to the needs of individual children. For, as Hawkins says,

> the raw material which educational design would think of shaping not only lacks the homogeneity of concrete and steel but is inherently parceled in unique individuate form, in the form of live human beings. . . In education the heterogeneity of human kind is not trivial . . . because it affects the *aims* of the process, and is indeed required by them. It is a super-ordinate goal of education, and if it is not it ought to be, to help children on their way to become competent . . . craftsmen in building their own lives. This requires from the start a recognition of individual competency and situation. Not to recognize individuality is not to educate (Hawkins, 1971).

All the panelists shared the concern that a more flexible and humane approach to curriculum development is sharply limited by the means now employed to measure a student's accomplishment. We need to employ improved techniques of direct observation of children in instructional settings to increase our understanding of how children learn, to evaluate our own progress in developing scientific curriculum materials, and to evaluate the accomplishment of children in the classroom. Hawkins, in fact, suggests that much of the success of some outstanding teachers may be attributable to their skill as observers of children and that this skill itself is subject to analysis and may be taught to others. He calls for

> experimental work on a small scale with children in poverty stricken circumstances. Such an experiment might take place in a small school which is thoroughly prepared with teachers who work diagnostically, who have support from the good cafeteria of curriculum materials and ideas—a rich repertoire—but who also are *acquainted* (and can become more so) with the educational resources of the concrete environment, natural, artificial, and human. One aim is to *evolve* (i.e., not by an engineering design of a

> "model" but through many small steps) a style of school life and work which fits the special strengths of the children as imaginative exploration helps define these, leading to nonstandard viable pathways into and out of the arts, science, books of many kinds, writing—but also in and out of the real surrounding world.
>
> The research associated with this has a basic rationale which is predicated on the expectation of radical success with substantial numbers of children. If this expectation is valid—and we know that skillful choice of teachers, *initial* materials repertoire, direction can pretty much guarantee this—the description by competent observers who know enough about testing, statistical theory, etc., not to use them to replace richer information—and the validity of results stands out "against the field" of known failure rates. An important result is the characterization of strengths and disabilities in the children observed in *such* an environment. The rationale is that of producing results with a fairly high frequency which we know to be *a priori* improbable under prevalent conditions (Hawkins, 1971).

From these general considerations, we turn to a few more specific suggestions for initiatives that might be taken by the NIE in the area of curriculum development. Intended simply to illustrate the approach we recommend, they would complement and extend much that is already underway throughout the nation.

Following Morrison, we propose as one approach that the government consider supporting the development of curriculum materials and strategies that would be designed to involve school children in the study of the materials, circumstances, problems and history of their own locality, with both a sense of playfulness and intellectual rigor. We advocate not a new educational isolationism or renewed parochialism but an attempt to exploit fully the richness of the unique local scene in an effort to engage children in reality, in particular circumstances, and to acquire, thereby, knowledge and experience of wide utility.

Typically, students might produce guides—to the rocks, history, government, water supply system—of their locality. They would work in teams with their teachers and members of the community, engaging consultants, researching archives, making measurements, interviewing officials, employing tools and instruments, and analyzing and synthesizing their data to produce useful information. Organizational as well as cognitive skills would be required. Science, old lore and myth, poetry and statistical analysis might all play a part. But the touchstone would be the reality and richness of the local setting. Much would depend on the skill of the teachers and the quality and adaptability of the instructional materials available, because this mode of education, supported by the same old texts and discipline-oriented course work, could quickly degenerate into the familiar field trip.

The role, therefore, of the federal government should be support for the development of carefully conceived independent instructional units, pieces of curriculum that could be plugged in, adapted to, or serve as templates for still other pieces of a flexible pattern of instruction designed around particular local circumstances—a sort of Lego set of universal tools to be combined and recombined with infinite flexibility.

Closely related to this proposal is another by David Hawkins for teacher advisory centers:

> There is under development in the U.S. Office at the present time a program for allotting discretionary funds for 'teacher centers.' We outline here a development-cum-naturalistic-research program which might go under some such title but with specific features appropriate to an NIE research and development effort.
>
> The basic assumption behind the proposed development is that our national elementary and secondary schools lack one organizational ingredient vital to teachers professional growth and, therefore, to innovation in curricula. This is a place—an old school building, a large old house, etc.—with associated staff whose job it is to give moral, intellectual, and some material support to teachers looking for help. The nature of this staff is that they are divested of line duties and powers in the system, that their head person reports only to the top, e.g., superintendent, and on the other hand lacks

all administrative powers. The talents of this staff are such that they are experienced teachers with generalistic interests and experience, but share among them strong subject matter commitments.

The definition of their role is distinct from the now-vanishing "supervisor" on the one hand, and from the subject matter specialist on the other. They differ from the latter in not being committed to any even spread among all teachers, are able to scent out and work with "growth points" among teachers and principals seriously interested in educational leadership. This uneven investment (at any one time) is critical, though consistent with some balance between intensive work with a few and extensive work with larger numbers.

This staff is seen as analogous to the county agriculture agent or, more fancifully, the spirituals of the Jesuit order. They are hospitable in the center (detached from administrative headquarters) to casual teacher (or other) visitors, set traps to catch interest, run informal courses there (or in schools) for interested teachers, visit teachers in schools who want their teaching help or their advice, take special responsibility to help beginning teachers, encourage curricular initiative by inventive teachers, intervene gently with principals, and are prepared always to withdraw when they are not wanted or are wanted for unprogressive reasons. They are able to encourage planning discussions among school staffs and can informally negotiate (and recommend discretionary funds) for released time for intensive courses or for the half-day a week which goes to a teacher exploring new materials, etc. In connection with the "Lego set" proposal above, groups could contain, and could give strength to, persons especially involved in locally oriented projects in history, archeology, geology, transportation studies, etc.

Such a staff should also contain some skills in naturalistic research, time for discussion, self-education, writing, help from university consultants. A variety of such centers could be linked in a loose federation with advice and support from a central NIE staff possessing essentially the same qualifications—preferably in turn spending some of their time in some similar Washington center.

The program would "start small" in localities judged to be ready for such an innovation—a crucial point being that of noninterventionist support from the top of the local system. There are now a few small ventures around the country conceived in this general spirit, and there are persons—not yet numerous—already qualified and experienced. To start on a scale larger than this supply allows would be an error, but the program itself could be designed for growth in the measure of its success. A part of its research and more informal kind of harvest would be aimed at making successful experience more widely visible (Hawkins, 1971).

Turning from our suggestions for particular experiments in curriculum development, we propose some initiatives the NIE might take to investigate and affect the context in which curriculum development takes place.

First, careful studies should be made of existing educational environments, from individual classrooms to entire communities, to increase our understanding of schools and communities as functioning mechanisms. All too often, curriculum development has been carried on as though all schools fit some ideal model and *ad hoc* mechanisms have been devised after the fact to fit them as best we can to the poorly understood realities of actual settings. Much more must be known about teachers' attitudes toward children and each other and the consequent effects on children's achievements, about the relationships between various levels of community medical care and educational achievement, about the impact of television on the attitudes, aspirations and achievement of children and their parents, about the practical constraints on change in real schools, and so on.

Second, we believe that careful, even painstaking, attention should be devoted to the identification, support and careful examination of schools that appear to be functioning well, particularly under circumstances in which most schools are failing. We are far too ready to begin new experiments without examining old ones and

too little interested in learning what we can from our successes.

Studies should also be done on the curriculum development process itself, on the economic and social environment in which it takes place and the constraints that environment imposes on the developers. Is it possible, for example, that the paucity of minority group people involved in national curriculum development has any causal relationship to the tendency of developers to construe inner city education problems in terms of deficiencies of the children rather than deficiencies of the schools? Why is it that while we have many studies of minority group behavior in urban educational settings, we have few studies of majority group behavior in those settings? It should be noted also that no good studies exist of the school market structure or the role of commercial publishers in curriculum change, although we know that curriculum reform is intimately related to these two factors.

It is obvious that good questions can be asked concerning the environment for which curriculum is developed and the process of development itself. What is not so obvious is that curriculum development is without peer as an instrument for asking the important questions in American education. Precisely because it involves decisions as to what should be taught and how, it provokes all the substantive questions of value, priorities, style, purpose, and methodology that have yet to be addressed in a coherent manner at a national level.

It is curious, in a nation addicted to presidential commissions, that no such commission has been asked to inquire into these questions. Perhaps the explanation lies in the reservation of the governance of education to the states and the strong tradition of localism in educational decision making. However, both the statistics provided in recent national surveys and the reports of sensitive observers strongly indicate that one of the remarkable features of American education is its consistency, its lack of variety from school to school, from community to community. In England, on the other hand, while the national government takes a direct role in public education, there is considerably more variety in educational practice. Thus, it is by no means clear than an increased federal role inevitably leads to lack of diversity and a national curriculum; indeed, there is substantial evidence that the opposite can happen.

The English Schools Council, a national body, has from time to time assembled distinguished groups of lay citizens to review the state of one or another aspect of education in the country with great effect. The most recent such report, *Children and Their Primary Schools*, has stimulated a national debate through the last three years that has had a decidedly constructive effect on the whole educational scene in the country. We strongly recommend that the National Institute of Education adapt the English procedure to our own requirements with a view to promoting a high level of public discourse on the purposes and condition of public education.

The debate, of course, should not be confined to the Commission members. Means should be found by the NIE to involve professional educators and lay members of local communities in the same discussion and to provide materials and mechanisms that will increase the sophistication of all parties with respect to the issues involved and the alternatives available. The NIE should not promote particular solutions or seek in any way to resolve the issues.

Indeed, in all that it does, the NIE should be mindful of the lack of agreement in the field on basic substantive and methodological issues in curriculum development. It should, above all, beware of orthodoxies, ideologies of the left or right, and opt wherever possible for mixed strategies for educational change. And in doing so, it should promote constant examination of its processes, self-conscious evaluation during the act of development, of a sort that will help us all to ask better questions about our assumptions, our procedures and techniques, and our successes and failures.

Lastly, we return to our opening theme: in its essentials, curriculum development, if it is to help lead to effective educational reform, cannot now and probably never ought to be seen simply or only as a mechanical process for the manufacture and installation of new products; the engineering analogy, while not inappropriate in one sense, if not most carefully itself enriched and amplified can impoverish us by lending a specious clarity and simplicity to one of society's most difficult and demanding enterprises, designing the education of its children.

Educational reform is an evolutionary process, the success of which depends on working contact among human beings over a long period of time—long enough and close enough to bring about significant changes in the perceptions, attitudes, working relationships and basic values of the educators and educated. This is a

process in which many must be involved over the years and which cannot be short-circuited, but we are confident that, properly conceived and managed, it will yield handsome dividends.

What is required is a rationale and model for federally sponsored curriculum development that is itself humane, analytic in nature, and self-consciously introspective and responsive to the great value questions of the society, that values quality over quantity and places a premium on the involvement of scholars of style and substance, of teachers, students, and parents. Perhaps such a rationale and model may help produce humane schools, release the talent now latent in the schools and communities, and develop schools which reflect and take advantage of the richness and variety of American life. Surely we need to make the best use of what we know about how people learn and add to that knowledge; we need to engage the most talented people in the country in the construction of curriculum that will help children attain the highest intellectual, aesthetic, and moral standards of which they are capable.

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